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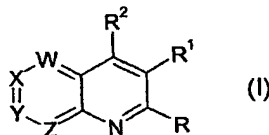
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(54) Title: NAPHTHYRIDINE DERIVATIVES AND THEIR USE AS FUNGICIDES



(57) Abstract: Fungicidal compositions of the general formula (1): wherein one of W, X, Y and Z is N and the others are CR⁸; R⁸ is H, halo, C₁₋₄ alkyl, C₁₋₄ alkoxy or halo(C₁₋₄)alkyl, provided that when X is CH, Z is N, R is NHNH₂, R¹ is phenyl and R² is Cl, W and Y are not both CCH₃; one of R and R² is NR³R⁴ and the other is halo, C₁₋₈ alkyl, C₁₋₈ alkoxy, C₁₋₈ alkylthio, C₂₋₈ alkenyl, C₂₋₈ alkynyl or cyano; R¹ is aryl, heteroaryl, morpholino, piperidino or pyrrolidino; R³ and R⁴ are independently H, C₁₋₈ alkyl, C₂₋₈ alkenyl, C₂₋₈ alkynyl, aryl, aryl(C₁₋₈)-alkyl, C₃₋₈ cycloalkyl, C₃₋₈ cycloalkyl(C₁₋₆)alkyl, heteroaryl, heteroaryl(C₁₋₈)alkyl, NR⁵R⁶, provided that not both R³ and R⁴ are H or NR⁵R⁶, or R³ and R⁴ together form a C₃₋₇ alkylene or C₃₋₇ alkenylene chain optionally substituted with one or more C₁₋₄ alkyl or C₁₋₄ alkoxy groups, or, together with the nitrogen atom to which they are attached, R³ and R⁴ form a morpholine, thiomorpholine, thiomorpholine S-oxide or thiomorpholine S-dioxide ring or a piperazine or piperazine N-(C₁₋₄)alkyl (especially N-methyl) ring; and R⁵ and R⁶ are independently H, C₁₋₈ alkyl, C₂₋₈ alkenyl, C₂₋₈ alkynyl, aryl, aryl(C₁₋₈)-alkyl, C₃₋₈ cycloalkyl, C₃₋₈ cycloalkyl(C₁₋₆)alkyl, heteroaryl or heteroaryl(C₁₋₈)alkyl; any of the foregoing alkyl, alkenyl, alkynyl or cycloalkyl groups or moieties (other than for R⁸) being optionally substituted with halogen, cyano, C₁₋₆ alkoxy, C₁₋₆ alkylcarbonyl, C₁₋₆ alkoxy carbonyl, C₁₋₆ haloalkoxy, C₁₋₆ alkylthio, tri(C₁₋₄)alkylsilyl, C₁₋₆ alkylamino or C₁₋₆ ialkylamino, any of the foregoing morpholine, thiomorpholine, piperidine, piperazine and pyrrolidine rings being optionally substituted with C₁₋₄ alkyl (especially methyl), and any of the foregoing aryl or heteroaryl groups or moieties being optionally substituted with one or more substituents selected from halo, hydroxy, mercapto, C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl, C₁₋₆ alkoxy, C₂₋₆ alkenyloxy, C₂₋₆ alkynyloxy, halo(C₁₋₆)alkyl, halo(C₁₋₆)alkoxy, C₁₋₆ alkylthio, halo(C₁₋₆)alkylthio, hydroxy(C₁₋₆)alkyl, C₁₋₄ alkoxy(C₁₋₆)alkyl, C₁₋₆ cycloalkyl, C₃₋₆ cycloalkyl(C₁₋₄)alkyl, phenoxy, benzyloxy, benzoyloxy, cyano, isocyano, thiocyanato, isothiocyanato, nitro, -NHCOR⁷, -NHCONR⁷R⁷, -CONK⁷R⁷, SO₂R⁷, -OSO₂R⁷, -COR⁷, -CR⁷=NR⁷ or -N=CR⁷R⁷, in which R⁷ and R⁷ are independently hydrogen, C₁₋₄ alkyl, halo-(C₁₋₄)alkyl, C₁₋₄ alkoxy, halo(C₁₋₄)alkoxy, C₁₋₄ alkylthio, C₃₋₆ cycloalkyl, C₃₋₆ cycloalkyl(C₁₋₄)alkyl, phenyl or benzyl groups beings optionally substituted with halogen, C₁₋₄ alkyl or C₁₋₄ alkoxy.